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*Sheep -
Cost of
production*



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SHEEP PRODUCTION - A SURVEY OF PRESENT CONDITIONS,

AND SOME RECENT FINANCIAL RESULTS WITH WELSH

FLOCKS.

by

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SHEEP PRODUCTION - A SURVEY OF PRESENT CONDITIONS,
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Sheep and Current Agricultural Policy.

At the present time efforts are being made to direct the attention of Welsh farmers to the need for production of an increasing quantity of livestock and livestock products. They are told, it is true that the gap in supplies must be bridged to a considerable extent by the utilisation and employment of native resources, and that hopes of substantial increases in foreign supplies of feed-ingstuffs cannot be entertained during the next few years; but the obvious alternative is to increase the supply of good home-grown feeds, primarily by directing attention to the production of more, and better, grassland products. Meanwhile our supplies of all livestock products still fall short of the demand, and, while this situation exists, Welsh farmers can choose freely the type of livestock and livestock product on which they will concentrate their efforts. Several factors, however, will determine their choice; and by all accounts, labour and feed are the most important of these. With a guaranteed market, consumer demand will presumably not affect their decision - not at any rate, in the short-term period. Whether the consumer market is saturated or not, the farmer still has the security of a State guarantee of purchase at a minimum price.

The Agricultural Expansion Programme envisages a smaller change in the production of mutton and lamb than is the case with any other livestock product. This is probably on account of the relatively extensive loss in sheep during the 1947 disaster. The production of mutton and lamb in the United Kingdom for the calendar year 1948 was about $5\frac{1}{2}$ per cent more than in 1947, but still about 18 per cent below the figure for 1946 - while it represented about 58 per cent of the pre-war level of production.*

The Expansion Programme aims at getting a production in 1952-3 equivalent to 85 per cent of the pre-war level. This compares with 110 per cent in the case of beef and veal, and 92 per cent in the case of pigmeat.

Of all the meat products, mutton and lamb shows the widest gap between total current consumption and home production. For the U.K. as a whole only about one-quarter of the total consumption of sheep-meat is produced on our own farms, although they supply about one-half of our total consumption of beef and pigmeat.**

The comparative trends of consumption and production for Australia, a large producing country and the U.K. - a large consuming country, are shown in the following table, which is based on information supplied in the bulletin of the Commonwealth Economic Committee.**

* Intelligence Bulletin, Vol. I, No. 10, March 1949. Commonwealth Economic Committee.

** Meat. Summary compiled by Commonwealth Economic Committee, 1948.

Consumption and Production of Mutton and Lamb.
1937 = 100.

Year.	United Kingdom.		Australia.	
	Con- sumption.	Prod- uction.	Con- sumption.	Prod- uction.
1938	104.2	109.3	100.0	98.4
1939	106.0	123.3	100.0	98.4
1940	118.1	117.6	*	111.3
1941	92.8	91.2	*	114.3
1942	101.5	88.6	*	127.0
1943	108.0	81.9	115.7	131.8
1944	96.5	73.6	117.4	121.5
1945	93.7	69.4	111.3	89.3
1946	106.0	77.0	105.7	94.6
1947	102.2	60.6	99.9	95.8

* Not available.

During the war years Australia had a relatively high consumption of mutton and lamb per person, but current indications are that it is falling back to normal levels. Moreover, she has in recent years attempted to raise her production of sheep-meat; and, had it not been for the effect of severe drought in 1944-5, her production figures for 1946 and 1947 would probably have been considerably higher than they actually were. The increase relative to consumption (domestic) would of course have been still more marked, especially as the latter was showing a natural tendency to decrease. All these considerations mean that her exportable surplus is likely to increase in the near future. To safeguard home sheep-producers the British consumer may therefore be eventually committed to a growing proportion of sheep-meat in her total meat consumption; especially will this be so if economy in the purchase of 'dollar' beef becomes more pressing, and if home-produced beef available increases to only moderate levels. Relative changes in production and consumption in the U.K. and Australia are shown in the Graph at the end of this report.

The British sheep industry has its own peculiar structure. In England and Wales at December 1946 just under 40 per cent of the total ewes and shearling ewes qualified for the Hill Sheep Subsidy, the corresponding ratio for Wales being 62 per cent. The poor, upland pastures are therefore important breeding grounds for the native sheep population. The reason for this is clear. With the pressure of a continually increasing cost of manual labour, sheep, as agents of fertility in an arable system of farming, are falling into disfavour, and this country is therefore being forced to produce a greater proportion of its sheep-meat supply from grass. Moreover, the better grassland is being utilised increasingly for the production of liquid milk. Sheep farming therefore appears to be steadily adjusting itself to meet the needs of other stock, and the success of

farm organisation would seem to depend very much on a balance of stocking which does not prejudice the chances of obtaining full advantage from the production of 'premiumed' commodities. On the other hand, lowland pastures can still accommodate sheep at certain seasons of the year in Wales without prejudicing their capacity for other forms of production; and it becomes increasingly clear that the prosperity of these pastures, and of lowland-pasture sheep in particular, will determine the prosperity of the hills and their sheep. The provisions of such measures as the Hill Farming Act will help little if no stimulus is given to the production of fat lamb on lowland pastures.

Our agricultural conditions in Britain are still very much governed by short-term considerations relating to the 'balance of payments'. Efficiency standards must therefore be compatible with maximum economy in the expenditure of dollars. It is difficult to visualise a normal and permanent structure for home agriculture or the prospects to be expected over a long period for our different lines of agricultural production. Will our sheep industry, for instance, be permanently protected, or can we attain a standard of efficiency in sheep production which will meet any competition from other countries?

Some Recent Changes and Trends.

It was necessary during the war to discourage any increase in lowland sheep flocks on account of the urgent need to devote all the land space available to crops for direct human consumption, or to the production of essential foods like milk. An adjustment towards a greater livestock economy within our agriculture has since been taking place. The recovery of the sheep population of course suffered a severe set-back with the storm early in 1947. What the probable normal trend of sheep numbers would have been from 1946 to the present day is a matter of conjecture, although it is reasonable to expect that it would have been upwards. Incidentally, if comparative figures for Wales on the one hand, and England and Wales as a whole, on the other, are examined for the years between 1938 and 1948, some interesting differences are evident. These may be largely due to a relatively greater preponderance of highland sheep in Wales. Table I in Appendix A shows that in Wales flocks maintained relatively high numbers during the war period, and that, in spite of the steep decline following the 1947 disaster, the Principality appears to have made a somewhat bolder effort than its neighbour to rebuild its flocks.

Reference has already been made to the disaster that befell our country in the early part of 1947. The effect of this storm was particularly obvious on the hills, and especially where livestock normally outwinter. According to the official Agricultural Returns there were 2,028,885 breeding ewes (including tupped shearlings) and 554,361 female lambs of the 1946 crop on Welsh farms at December 1946. At December 1947 the corresponding numbers were 1,626,574 and 308,667, representing a decrease of about 20 and 44 per cent respectively. Moreover, there were about 312,000 fewer ewes in lamb or with lambs at foot in March 1947 than there were in March 1946. Tables 3(a) and 3(b) in Appendix A show the structure and disposition (by Counties) of the sheep population in Wales in recent years. These tables bring out the extent and

character of the changes imposed on Welsh flocks as a result of the 1947 disaster.

With 940,000 lambs on Welsh farms at June 1947, it would be reasonable to expect that the lambs born in that year would be little more than one million, and probably about three-quarters of a million less than the normally expected lamb crop. As about 400,000 ewe lambs would normally be required in Wales for breeding flock replacement, it is obvious that all the ewe lamb crop in 1947 would only just meet normal replacement requirements, leaving hardly any surplus for rebuilding.

The number of lambs surplus to requirements of replacements in 1947 was probably only about one-third of the normal supply of $1\frac{1}{2}$ - $1\frac{1}{2}$ millions available for disposal. Moreover, this does not represent anything like the total loss of revenue for flockowners. The 'national' ewe flock itself had been reduced by over 20 per cent, with the probable effect that the number of cast or draft ewes for disposal would be about 80,000 less than usual in the year of disaster; and, although the number available for drafting in future years may rise fairly steadily, hill flocks in particular will not bring in a normal income from sales for several years. It is some relief therefore that the subsidy on breeding ewes is to continue and, particularly in some cases, that payment may be made on December 1946 numbers even in 1949.

We cannot get away from the fact that our highlands, to be in productive use, need sheep. There are people, however, who wonder if sheep are necessary to keep certain lowland areas in continuous productive use. Any long-term policy may have to take into consideration the effect on the productivity of land if sheep are reduced to very insignificant numbers or possibly dispensed with altogether.

The importance of sheep in the post-war structure of British farming is officially and significantly recognised in the price revision of August 1947. The official index* of prices of farm products in general (including acreage payments) increased by about 11 per cent between the harvest years 1946-7 and 1947-8; the corresponding increases in the indices for fat sheep and fat lambs were 31 and 27 per cent respectively.

An indication of comparative changes in sheep prices and agricultural prices in general is given in the following table. Alongside the 'official' quoted indices are shown relative changes in prices obtained for sheep as on a hill farm in Wales.

It will be seen that by 1948 fat sheep prices were getting near parity with agricultural prices in general. Store sheep prices have moved up appreciably, although not commensurately with those of fat sheep. There has

* Ministry of Agriculture and Fisheries. M.I. Series.

		: Indices of		: Fat Sheep		: Store Sheep		: Index of Prices	
		: Fat Sheep		: Index as %		: Index*		: Realised on Welsh	
		: Prices*		: of General		: (September to		: Hill Farm 1929-30	
		: 1927-8 =		: Price Index*		: November only)		: = 100.	
Year.	: 1929-30 = 100:			Year	: (1927-9 = 100):	: Draft		: Store	
						: Ewes,		: Lambs.	
1939-40	: 92	: 82.5		1939	: 78	: 68		: 63	
1941-42	: 116	: 70.7		1941	: 106	: 87		: 80	
1943-44	: 125	: 71.6		1943	: 119	: 98		: 125	
1944-45	: 135	: 76.1		1944	: 132	: 93		: 121	
1945-46	: 143	: 77.5		1945	: 145	: 78		: 116	
1946-47	: 153	: 76.6		1946	: 147	: 90		: 96	
1947-48	: 200	: 88.3		1947	: 168	: -		: -	
Sep. 1948	: 211	: 92.4		1948	: 197	: 148		: 190	

also been an appreciable rise in the price realised for wool; in the case of the hill farm from which figures are quoted above, the average price realised for the 1939 clip was $9\frac{1}{2}$ d. per lb. compared with $29\frac{1}{2}$ d. per lb. realised for the 1948 clip.

Some changes have been occurring in Wales in the relative numbers of sheep and cattle. Up to the outbreak of war in 1939 the ratio of sheep to cattle had been showing a small increase; the ratio of sheep to store cattle over 2 years old was increasing somewhat more sharply. But the reduction of flocks as a wartime measure, and more particularly as a result of the 1947 disaster, with the steady rise in numbers of cattle in milk-producing herds, has resulted in a marked decrease in the ratio of sheep to cattle in recent years. (See Table 2, Appendix A.)

Results of Financial Investigations.

Highland and Lowland Flocks.

During 1946-7 and 1947-8 information was obtained again, as in 1945-6, on the financial results of sheep enterprises on highland and lowland farms in Wales. In the case of the highland group of farms the lamb crops under consideration were those of 1947 and 1948, while in the case of the lowland group they were those of 1946 and 1947. The year of investigation for lowland flocks was taken as April 1st-March 31st; this meant that the financial results of both years, 1946-7 and 1947-8, were considerably influenced by the adverse weather in the early part of 1947. The highland sheep investigation year started on November 1st, so that the influence of

* Ministry of Agriculture and Fisheries Series.

the storm was most obvious in the results of the year 1946-7.

(a) Hill Sheep Flocks.

General Considerations.

For hill sheep farming the disaster of 1947 created a special problem, or series of problems. Not only was there a substantial loss on the year's results, but flocks in many cases were also so depleted that it will take several years to rebuild the necessary complement of sheep. Even in normal years it is difficult to obtain very accurate data of the nature and extent of losses in sheep under hill conditions, but conditions in the early part of 1947 prohibited any accurate measurements of such factors as lambing ratios and the degree of barrenness in ewes, or their effect on the profitability of the enterprise.

It must be realised at the outset that financial results for hill sheep flocks in 1947-8 - and subsequent years - must be considered in the light of conditions existing as a result of the recent disaster. It is probably true to say that the year 1947-8 on the hills was rather better than normal. The scale of financial assistance is related, at present, to a larger size flock than, in most cases, actually exists; there is a scarcity value attached to the draft ewe which is reflected in its market price; and the need for capital replacement in breeding flocks is very pressing. These are some of the things to bear in mind when assessing financial results of flocks for the year 1947-8 and subsequent years.

All tables relating to the hill sheep investigation appear in Appendix B of this report.

In Table I is shown the comparative statement of income and expenditure for all flocks under study in the respective years. The details are shown in terms of per 100 ewes for lambing in each year. Before drawing any conclusions from these comparative results it is necessary to bear these points in mind:-

(a) The hill sheep subsidy was, in most cases, paid on December 1946 numbers in both years, and the amount per head payable in 1948 was of course 16s per head.

(b) The calculation of grazing cost is based on an actual comparative grazing record in each year. While a more or less fixed grazing area is kept on the farms investigated, the costs are allocated according to actual utilisation by stock. In the summer of 1947 the numbers of sheep were so depleted that much of the land was probably understocked and undergrazed; this meant that the charge for grazing to sheep was probably underestimated, and that cattle were taking too large a share on that account.

(c) The increase in valuation in 1947-8 represents capital replac-

ment in sheep for the purpose of restoring the normal size of the flock and cannot therefore be regarded as a realisable asset in the normal sense.

Two of the 39 flocks investigated in 1946-7 did show a profit balance. In one case income exceeded expenses by £646, and valuation of sheep stock decreased by £117; in the other case income exceeded expenses by £553, and sheep stock valuation showed a decrease of £45. A number of factors accounted for the relatively favourable results with these two flocks, and among these were -

- (a) both were large sized flocks;
- (b) losses on cws were relatively low;
- (c) no wether flocks were kept, hence no loss on wethers was incurred;
- (d) In one case there were no wintering costs;
- (e) sales were maintained at a reasonably high level - one farm had purchased 160 lambs to sell fat later in the season.

This investigation was commenced in 1945-6 and comparative results are available for an identical group of 39 flocks over a three-year period. These are shown in Table 2 of Appendix B.

It will be noticed that in 1945-6 and in 1947-8 the hill sheep subsidy constituted a little over one-half of the profit margin, and that, in 1946-7, it reduced the loss to three-quarters of what it might otherwise have been. The cost of wintering sheep in 1947-8 was considerably less than in previous years simply because there were so many fewer sheep available for sending away. As has been previously explained, the expenses for 1947-8 might justifiably be burdened with heavier grazing land costs. A similar qualification could apply to the labour cost: the charge entered is based on actual times spent on various operations and duties with the sheep, but with reduced numbers this time would be lower than normal. On hill farms generally a fixed labour complement is carried, which is more appropriately related to the normal size of flock. Whether the costs should be adjusted for unutilised labour and pasture area is probably a debatable matter, yet it is necessary to consider these things in the interpretation of the comparative results.

It might be more realistic to consider the results over a continuous period of three years for the identical group. If this is done, we find that the total profit for the 39 farms over the three year period amounts to £21,516, or about £184 per farm per annum; this is equivalent to only £29 per 100 cws per annum, and, if we exclude the hill sheep subsidy, there will be a loss of £23 per 100 cws per annum over the three years. The

and

details of a statement of income/expenditure over the three-year period are approximately as shown in the table below:-

Statement of Results 1st November 1945 - 31st October 1948.
39 Identical Flocks.

Per 100 Breeding Ewes at November 1945.

	£	:		£
Opening Valuation of Sheep	295	:	Income from Sales of Sheep	211
Purchases of Sheep	27	:	Income from Sales of Wool	57
Food Costs:		:	Hill Sheep Subsidy	156
Hay, Sheep Nuts etc.	10	:	Closing Valuation of Sheep	223
Grazing	58	:		
Rape, Turnips, etc.	8	:		
Agistment	46	:		
Labour on Sheep	90	:		
Transport	3	:		
Other Expenses	20	:		
Margin - Profit	90	:		
	<u>647</u>	:		<u>647</u>

The profit margin of £90 is the margin per 100 ewes over three years, and is therefore equivalent to about £30 per 100 ewes per annum.

Analysis of Sales.

The prosperity of hill sheep farming is generally identified with the product of annual autumn sales. This will depend of course on lambing results, which determine the number of sheep for disposal and replacements, and the surplus male lambs available, with possibly a few female lambs. The comparative prices realised for different classes of sheep in the three years of this investigation were as follows:-

Average Prices per Head.

Class of Sheep.	1945-6	1946-7	1947-8
	s. d.	s. d.	s. d.
Fat Lambs	42. 9	48. 10	62. 4
Store Lambs	24. 4	39. 4	52. 8
Fat Wethers	58. 9	65. 8	85. 8
Store Wethers	48. 1	52. 1	80. 9
Rams and Ram Lambs	67. 3	116. 8	223. 0*
Fat Ewes	35. 0	38. 8	45. 0
Draft Ewes	34. 11	56. 0	68. 7

* The average price paid for rams in 1947-8 has been influenced by the fact that some flockmasters in an attempt to improve their flocks have been paying high prices for pedigree rams.

The average price realised, through and through, for all sheep was nearly 50 per cent higher in 1946-7 than in the previous year. Scarcity of sheep accounted for this to some considerable extent, but there is no doubt that with the new schedule of prices announced in August 1947 some improvement would have been expected in prices of sheep from the hills - quite apart from the influence of scarcity. An increase of 10 per cent, with a normal volume of sheep exposed for sale, could have resulted in a realisation from sales of sheep of £27,000 on the 39 flocks under investigation in 1946-7; as it was, such sales realised only £13,700. Even if a moderate increase in costs were allowed, these flocks could reasonably have been expected to realise a profit of something like £18,000 with normal conditions, and not the loss of £31,000 which was actually incurred. Thus a figure like £50,000 more nearly represents the real loss sustained by these 39 farms on sheep in the year 1946-7 as a result of the 1947 disaster: it would be equivalent to a loss of about 30s. per breeding ewe.

There was a substantial increase in the numbers of practically all classes of sheep in 1947-8 as compared with 1946-7. But probably one of the most remarkable changes was that in the price realised for the sheep. Sales of draft ewes in 1947-8 were no doubt lower in relation to sales of lambs than might normally be expected. This was partly due to a slight tendency to raise the drafting-out age, and partly to a somewhat higher lambing ratio. The next table shows how receipts from sales of sheep were distributed in each of the three years.

Distribution of Receipts from Sale of Sheep.

Class of Sheep.	1945-6.	1946-7.	1947-8.
	48 Flocks	39 Flocks	49 Flocks
	%	%	%
Fat Ewes	0.4	0.8	0.1
Draft Ewes	39.8	33.8	32.9
Fat Wethers	8.1	16.0	9.9
Store Wethers	10.9	12.2	7.8
Fat Lambs	15.8	17.0	12.3
Store Lambs	22.8	16.8	32.0
Rams & Ram Lambs	2.2	3.4	5.0
Total	100.0	100.0	100.0

Where farms had facilities for fattening of lambs this factor contributed substantially to the relatively favourable financial returns. Such lambs were generally fattened on rape, and realised prices of about £1 per head more than store lambs sold off the same farms. In typical cases in the 1947-8 investigation sample the cost of rape averaged about 1s.3d. per sheep week; and not only did the sheep put on weight, but they also caused

considerable improvement to the land. Even if a lamb puts on only 2 lb. weight in a week on this crop, the expense will have been worthwhile. Some farms produced rape and mixed rape/turnips at a net cost of below £4 an acre. If £4 can be accepted as an average cost, and if the amount of keep on an acre is equivalent to 120 sheep weeks - only a moderate assessment - the resulting cost of 8d. per sheep week can be regarded as reasonable. On a very conservative estimate, therefore, an expenditure of £4 per acre on such a crop should bring in a return, in increased live-weight in sheep equivalent to the value of £12 to £15 per acre. It seems therefore, that where conditions are suitable more hill farms might supplement their income by adopting this system of fattening some of their lambs; it has considerable advantages, both because it increases the income-earning capacity of the sheep flocks and because it improves the land - an improvement which in turn increases stock-carrying capacity.

In the sample of flocks investigated in 1945-6 an average of 35 sheep - of all classes - were sold for every 100 ewes in the flocks; the relative figure for 1946-7 was only 13 while for 1947-8 it was 41.

Lambing Results.

The expected lamb crop for 1947 was considerably reduced by losses in ewes prior to lambing as well as by deaths in lambs after birth. Of the total number of lambs estimated to have been born alive in the 39 flocks, a little over one-half were subsequently lost. Nearly half of the remainder were kept for ewe flock replacement; about one-fifth were retained as wethers; and just under one-third were sold as store lambs. For every 100 ewes prepared for lambing during the autumn of 1946 only 41 lambs were accounted for in the first count; the effective lambing ratio was eventually reduced to just over 20 per cent. The comparable effective ratio for the 48 flocks in the 1945-6 enquiry was 68 per cent, and, for the 49 flocks in the 1947-8 enquiry, 76-77 per cent.

Comparable results for an identical group of 39 flocks in the three years were as follows:-

	1945-6	1946-7	1947-8
<u>Per 100 Ewes for Lambing:-</u>			
No. of lambs at first count	71	41	77
Losses in lambs after first count	4	22	3
Net no. of lambs for disposal	67	19	74
No. of lambs used for ewe flock replacement			
- per 100 ewes at end of year	32	16	38

Flocks suffered varying degrees of losses in 1947. In some cases lamb crops of nearly 100 per cent were recorded. On the other hand, the worst case encountered in this investigation was one where only 3 lambs were obtained for each 100 ewes prepared for lambing in the autumn of 1946; in this particular instance the ewe flock itself had been reduced from 1700 to about 100 before lambing commenced.

The comparative disposal of the lamb crop in the three years, for the full sample in each case, is shown in the next table.

Disposal of Lamb Crop (as percentages).

	Including Deaths and Losses.			Excluding Deaths and Losses.		
	1945-6	1946-7	1947-8	1945-6	1946-7	1947-8
	%	%	%	%	%	%
Kept for Ewe Flock Replacement:	46.4	23.0	46.2	49.0	46.1	48.7
" " Wether "	15.9	9.8	11.1	16.8	19.7	11.7
" " Ram "	1.5	1.5	2.2	1.6	3.0	2.3
Sold as Fat Lambs	7.4	7.0	7.9	7.8	14.0	8.3
Sold, or on hand for Sale as Store Lambs	23.5	8.6	27.5	24.8	17.2	29.0
Losses during the year	5.3	50.1	5.1	-	-	-
	100.0	100.0	100.0	100.0	100.0	100.0

Some Other Results.

Deaths in ewes during 1947-8 appeared to be lower than normal at 3.4 per cent; this figure compares favourably with about 8 per cent for the flocks surveyed in 1945-6. In 1946-7 the ewe flocks were practically halved on the sample surveyed. It will have been observed already that a larger proportion of the lamb crop of 1948 was retained for flock replacement than appeared to be the case in 1946. This fact, together with the reduced loss through deaths in ewes, gives some indication of the extent to which the gap in the flocks is being filled up. If the figures for the 39 identical flocks (in the three years) are examined, some further indication will be given of the effort to reconstitute the flock numbers. The comparative figures are:-

Number of Breeding Ewes
and Yearling Ewes on 39
Flocks.

Autumn 1946	32,961
" 1947	18,181
" 1948	21,904

At this rate of restoring these flocks should be back to 1946 numbers by 1951. In the meantime, of course, there will be less than normal numbers of sheep for sale, and consequently less than the normally expected income from sale of sheep, unless the increased prices of draft ewes and store lambs will more than offset the deficiency in number. With a steady increase in the supply of sheep for sale after 1951 store sheep prices might stabilise, or even fall slightly from the high level of 1948. Should that happen it might prove an unwise policy to have reduced the rate of hill sheep subsidy at this juncture.

There was no apparent indication of a general attempt to increase wether flocks on the farms investigated. The proportion of income derived from their sale was more than normal among flocks studied in 1946-7, and there is no doubt that several flockowners could ill afford not to sell them during that year or to retain them merely to keep pastures grazed. For the identical group of 39 farms the numbers of wethers had dropped by the autumn of 1947 to 55 per cent of the previous year's level; in the autumn of 1948, however, there was a slight increase, and numbers had risen to 57 per cent of the 1946 level. It will have been observed that a smaller proportion of the total lamb crop of 1948 on the 49 flocks was retained for the wether flock than was the case in 1946.

Comparative Results with various sized Flocks.

Comparisons on a size-grouping basis have lost some of their value, with so many flocks substantially depleted through abnormal causes. Classification on the current ewe population basis places some flocks in groups where they would not normally belong. Tables 3a and 3b (Appendix B) have, however, been constructed on this basis, which means that twelve flocks, which were in the 1945-6 and 1946-7 samples, have been placed in a different size group for 1947-8 when the numbers of ewes for breeding changed substantially.

The variation in some of the items shown in the table for 1947-8 (Table 3b) probably needs some explanation. The wintering costs for Group 3 are low because two of the farms included incurred no expense on this item; in five of the remaining six cases relatively few sheep were wintered away. The relatively low figure of subsidy receipts per 100 ewes shown for Group 4 is due to the fact that two large flocks in this group have almost restored their flocks to their 1946 numbers and the average subsidy per 100 ewes (autumn 1947) therefore approximates to the per ewe rate applicable to the year 1948. In most other cases, however, the receipts from subsidy would be related to 1946 ewe numbers and not to the much lower numbers which were actually on the farms in 1947-8 and on which the table is based.

In view of the difficulty of getting accurate measurements of losses in sheep, one cannot very easily draw any conclusions as to the most important factors accounting for them. A comparison of the recorded losses in the three years on the farms investigated is shown in the

accompanying table.

Losses per 100 Ewes.

	Size Group 1.			Size Group 2.			Size Group 3.			Size Group 4.		
	400 Ewes or Less:			401-550 Ewes.			551-850 Ewes.			Over 850 Ewes.		
	1945-	1946-	1947-	1945-	1946-	1947-	1945-	1946-	1947-	1945-	1946-	1947-
	46 :	47 :	48 :	46 :	47 :	48 :	46 :	47 :	48 :	46 :	47 :	48 :
Ewes	12.3 :	50.7 :	3.3 :	8.0 :	41.7 :	3.5 :	9.0 :	58.5 :	5.9 :	7.5 :	53.1 :	1.9 :
Wethers &												
Rams	2.1 :	20.6 :	1.5 :	4.5 :	4.9 :	0.4 :	3.1 :	11.5 :	0.9 :	1.9 :	10.1 :	0.6 :
Lambs	1.6 :	19.3 :	3.5 :	2.8 :	18.5 :	2.6 :	3.4 :	16.3 :	2.3 :	2.9 :	16.0 :	5.3 :
Total All												
Sheep	16.0 :	90.6 :	8.3 :	15.3 :	65.1 :	6.5 :	15.5 :	86.3 :	9.1 :	12.3 :	79.2 :	7.8 :

It will be noticed that losses in the older classes of sheep were substantially less in 1947-8 than in the normal year 1945-6; losses in lambs were somewhat higher.

Results for 1947-8 showed a similar tendency to those of 1945-6 in regard to the relationship of flock size and lambing ratios; factors other than flock size so dominated the situation in 1946-7 that normal relationships hardly existed. The comparative data were:-

Lambs at first count per 100 Ewes for lambing.

	Size Group.			
Year.	1.	2.	3.	4.
1945-46	80	80	74	67
1946-47	44	51	62	37
1947-48	85	82	78	78

On the whole, Group 2 flocks showed the best results in 1947-8. To some extent this was associated with a relatively good average lamb yield and relatively low losses in sheep. The group of largest flocks showed the highest realisation from sales per 100 ewes, although it only very slightly exceeded that of Group 2. It was the latter group also that showed the highest realisation from sales per 100 ewes in 1946-7 and the lowest relative losses in sheep numbers. It appears that the group of smallest flocks has made the best effort

to rebuild ewe flock numbers. The relative increases in numbers of breeding ewes between autumn 1947 and autumn 1948 were:-

		%
Group 1	-	24
" 2	-	18
" 3	-	19
" 4	-	12

This tendency might of course be expected to correlate with the lambing ratio.

Size of flock might, under some circumstances, affect economy of labour; but there appear to be cases of large flocks for which there was a surplus of labour carried on the farms. The one important need in many farms is to adjust size of flock to the optimum for the labour available. Some seasonal operations with sheep show little variation in hours per 100 ewes with varying sizes of flocks; the average time required per ewe is more or less fixed. Some flocks also have an appreciably-sized accompanying wether flock, and to base the size grouping on the number of ewes only will, in such cases, mean that the labour time shown as spent per 100 ewes will appear to be rather high.

The average labour-hours spent per 100 ewes for the various groups of flocks in 1945-6 and 1947-8 were as shown in the next table:-

Hours per 100 Ewes.

Task or Operation.	Size Group.							
	1.		2.		3.		4.	
	400 Ewes or Less.		401-550 Ewes		551-850 Ewes		Over 850 Ewes	
	1945-6	1947-8	1945-6	1947-8	1945-6	1947-8	1945-6	1947-8
Shepherding	24.6	33.1	23.0	20.7	21.4	23.1	14.5	20.6
Docking & Marking	28	4.3	39	29	36	22	33	27
Dipping	10	10	11	14	15	13	15	14
Shearing (Inc. Washing)	47	64	50	49	48	47	38	50
Total of above	331	457	330	299	313	313	231	297

While it is obvious that size of flock does affect the labour requirement per sheep, it will be clear from the above table that the existence of other influencing factors will prevent any accurate measurement of the influence of the size factor. Any planning of labour complement and task requirements must of course consider the relationship of the sheep and cattle enterprises on individual farms.

(b) Lowland (grass-fed) Sheep.General considerations.

The survey of the costs of fat-lamb production commenced in 1945-6 on lowland dairy farms in Wales and was continued in 1946-7 and 1947-8. The sample was changed somewhat in the two latter years; but the new farms differed little in organisation from those in the original sample and they were in the same localities. The original survey in 1945-6 was concerned with the 1945 lamb crop; the 1946-7 and 1947-8 investigations were concerned with the 1946 and 1947 lamb crop respectively. The incidence of the adverse weather of early 1947 will therefore be directly evident in the results of both years, although the extent of the disaster on these farms did not reach the dimensions experienced on the highland sheep farms.

This particular investigation covers the period 1st April to 31st March in each year. The losses incurred with the breeding flock will therefore have affected the results of the year 1946-7 more than those of 1947-8; while the losses incurred with the lambs will have more markedly affected the results of the year 1947-8.

The average size of ewe flocks on these farms was 52 in 1946 and 1947. A number of lambs are usually bought in, particularly when there is a surplus of grass after dairy cows, and prices are favourable. In the case of the flock sample of 1946-7 between 16 and 17 additional lambs were bought in for every 100 lambs born on the farms, and in 1947-8 between 25 and 26. The distribution of flocks according to the size of ewe flock for lambing in each year was:-

Number of Flocks.

Ewes for lambing.	<u>Number of Flocks.</u>	
	1946-47.	1947-48.
Up to 29	10	11
30 to 59	14	13
60 to 89	4	1
Over 90	6	6
Total	34	31

The comparative figures of lambing ratios and losses in sheep for the whole sample in the two years were as follows:-

		<u>1946-7.</u>	<u>1947-8.</u>
No. of lambs born per 100 ewes	for lambing	135	124
Losses (Nos.) in lambs.	do.	16	31
Losses (Nos.) in ewes	do.	15	11

Appendix C of this report contains tables related to the investigation on lowland sheep flock costs. A summary of the financial results for 34 flocks investigated in 1946-7 and 31 flocks investigated in 1947-8 is shown in Table I of this Appendix. The results are expressed as per 100 ewes for lambing in the respective years. The actual profit per farm was estimated at just under £100 in 1946-7 and about £132 per farm in 1947-8.

Higher prices introduced in the autumn of 1947 contributed substantially towards the relatively favourable results for flocks in 1947-8. Although fewer lambs were sold in 1947 than would normally be available for sale on these farms, prices per head averaged 14s. more than in the previous year. Comparative prices for ewes in the three years realised by farms in this investigation were:-

Year.	Average Purchase Price of Ewes Bought.		Average Sale Price of Ewes Sold.	
	s.	d.	s.	d.
1945-6	55.	8	60.	0
1946-7	58.	1	63.	1
1947-8	78.	0	84.	0

Ewes sold would consist of aged ewes being graded fat, and also of an appreciable number of younger ewes sold for further breeding.

Individual farm policy in regard to sheep is somewhat flexible as far as the groups studied in this investigation are concerned. The number of sheep kept may be determined by the condition and supply of pasture; by the relative prices of fat lamb and milk; by the rate of losses through disease in the neighbourhood; and by conditions of labour supply. Despite this possible flexibility it may be of interest to compare results on an identical group of farms for the three years 1945-6, 1946-7 and 1947-8. These comparative results are shown in Table 2 of Appendix C.

Comparing the two latter years with 1945-6 it will be seen that the total income plus valuation change dropped in 1946-7 to less than 96 per cent. and in 1947-8 rose to nearly 110 per cent, of the first year's level; while corresponding total expenses rose to levels of 114 and 134 per cent respectively.

The relative losses of sheep numbers in the three years on these same twenty flocks were:-

	<u>1945-6.</u>	<u>1946-7.</u>	<u>1947-8.</u>
Per cent Deaths in Ewes	6.2	11.1	8.0
Per cent Deaths in Lambs	10.3	9.5	17.5

Apart from heavier losses, (after being born) fewer lambs were born per 100 ewes in this sample in 1947-8 than was the case in the previous two years. For every hundred ewes for lambing, 125 lambs were born in 1945, 130 in 1946, and 116 in 1947. On the eleven other flocks from which data were obtained in 1947-8, lambing results were somewhat better; the average ratio for the whole 31 flocks was 124 lambs per 100 ewes.

Although the primary object of the sheep enterprise on the farms in this investigation was to produce fat lambs off grass, trading in ewes has in a number of cases contributed quite substantially to the ultimate profitability of the enterprise. This fact has resulted in a lowering of the cost of lamb production (which normally includes depreciation on the ewe flock). Profit on trading of ewes has meant that several of the flocks apparently incurred no depreciation cost.

In order to convey the nature of flock replacement on the farms investigated the following table is constructed to show average numbers for flocks in the 1946-7 and 1947-8 sample of farms, in terms of per 100 ewes for lambing in each year.

	<u>1946-7.</u>		<u>1947-8.</u>	
	In- going.	Out- going.	In- going.	Out- going.
No. of Ewes Purchased	35	-	36	-
No. of Ewe Lambs brought in to Breeding Flock	12	-	14	-
Total	47	-	50	-
No. of Ewes Sold	-	40	-	34
Deaths & Losses in Ewes	-	15	-	11
Total	-	55	-	45

Although only 34 ewes were sold for every 100 lambing in 1947-8, they brought in a slightly higher income than did the 40 sold per 100 ewes for lambing in the previous year.

Analysis of Costs per Lamb.

If we can regard the trading in ewes as secondary and incidental, it

is justifiable to include it as part of the main process of fat lamb production, and therefore to adjust the latter's cost to any profits or loss incurred by it. This procedure has been adopted for the preparation of Tables 3 and 4 in Appendix C.

It appears from these tables that the identical group (of 20 flocks) is fairly representative of the total sample in each year. The cost per lamb shown for 1946-7 would be lower had it not been that the ewe flock sustained severe losses during the early part of 1947. It may be argued that this loss should have been borne by the product of the 1947 season's lamb crop. The fact that it was necessary to commence this investigation on April 1st each year made it impossible, unfortunately, to avoid this problem, which should be borne in mind when costs for the two years are compared.

Depletion of flocks early in 1947 involved flockowners in the purchase of more lambs for fattening the following summer than would normally be the case. Despite the fact that lambs bought in 1947 cost 64s.1d per head, or 24¹/₄d. per lb. deadweight - compared with 56s.4d. and 21d. respectively in 1946 - the ultimate cost per lamb for these flocks in 1947-8 was slightly less than in the previous year. To some extent this was due to a smaller death rate in ewes, and also to an appreciable rise in value of ewes drafted out, which resulted in a slight appreciation on the breeding flocks; these factors must have outweighed the effect of a relatively heavy loss in lambs in 1947-8.

The abnormal conditions of 1947 make it difficult to measure the capacity of organisation in the production of fat lamb during the years 1946-7 and 1947-8 of this investigation, particularly as the effects of the disaster varied so much in intensity from farm to farm. The influence of normal factors was discounted to a greater or lesser extent by that of the storm.

It is possible for a flock to show a very high margin between cost and price per pound of meat produced, and yet show a low total output per unit of resources used. In general, however, economy in the use of resources will reduce the cost of each pound produced without reducing the value of the ultimate product - at least not commensurately; in other words, one expects low costs to go with high margins. Occasionally, of course, high costs result in a better product with a higher output value per unit. For instance, in fat lamb production a policy of deliberate high-cost feeding, resulting in a greater output of weight per lamb, might well have the effect of reducing cost per pound weight.

One complication which arises in cost and price comparisons is that found where sales include a substantial number of lambs for breeding in other flocks. If such lambs have a pedigree value attached to them they will show an output value in terms of their weight considerably in excess of that normally applying to graded fat lambs. The eventual margin between cost and

price per lb. in such cases will be largely influenced by these market opportunities, rather, perhaps, than by efficiency in the production of fat lambs as such.

The margin is of course considerably influenced by the average weight of lambs, as the following table will show:-

Deviation of Cost from Nominal Price (per lb. deadweight).

Margin between cost and and nominal price per lb. deadweight. d.	Number of Cases.		Average deadweight for lambs sold (lb.)	
	1946-7	1947-8	1946-7	1947-8
	Nominal Price = 21d.	Nominal Price = 26d.		
20 - 24	-	2	-	42 ³ / ₄
15 - 19 ³ / ₄	-	8	-	41 ¹ / ₄
10 - 14 ¹ / ₂	5	8	43 ¹ / ₄	40 ¹ / ₂
5 - 9 ³ / ₄	16	8	43 ³ / ₄	40
0 - 4 ³ / ₄	6	4	42 ¹ / ₂	35
- 5 - 0	4	1	35	33
Loss exceeding 5d. per lb.	3	-	31 ¹ / ₄	-
Total	34	31		
Average margin (d. per lb.)	5	15		

There was considerably more variation in 1947-8 than in 1946-7 in the margin between cost and price on the farms investigated. While in 1946-7 this margin for nearly half the sample fell within a range of from 5d. to 9³/₄d. per lb, in 1947-8 there were eight cases in each of the ranges 15d. to 19³/₄d., 10d. to 14¹/₂d. and 5d. to 9³/₄d. The average margin, it will be noticed, rose by 10d; while the average nominal price (approximating to the average price realised per lb for the lambs sold in each respective year) rose by 5d. Even if the price of fat lamb had remained the same in 1947-8 as it was in 1946-7, the average margin realised on these flocks would still have shown an improvement from the first to the second year; the main reasons for this were profit on ewe trading, which was reducing the cost per lamb, and considerably reduced losses with breeding ewes, in the later year. There was only one case in the sample of flocks in 1947-8 where the cost per pound was higher than the nominal grading price; the flock concerned was very small, and the lambs had been graded early in the season before the price announcement in August 1947: the lambs were also small, averaging only 32³/₄ lb. deadweight per head.

Analysis of Sales.

The bulk of the lamb crop on the farms in this investigation is disposed of as fat lambs. The numbers offered in the store market are generally small and so are the numbers retained for flock replacement. The comparative disposal analysis for the three years of this investigation is shown below:-

Disposal of Lambs (excl. Losses).

	1945-6	1946-7	1947-8
	%	%	%
Sold as Fat Lambs	79.9	78.9	69.3
" " Store Lambs	6.9	3.7	10.1
" for Further Breeding	0.9	2.1	2.4
Kept for Flock Replacement	4.4	8.6	10.2
On Hand Unsold	7.9	6.7	8.0
	100.0	100.0	100.0

With the substantial increase on fat lambs in August 1947 it is not surprising to find that the increase in price realised for graded fat lambs between 1946-7 and 1947-8 was greater than in the case of store lambs over the corresponding period. Graded fat lambs realised 17s. per head more, and store lambs about 14s. per head more, in 1947 than in 1946. But it would also be reasonable to expect that store lambs offered in 1947 were not quite up to the standard of those available in 1946, because of the setbacks suffered by them early in 1947. A comparative analysis of sales of sheep on flocks investigated in the three years is shown in the following table:-

Class of Sheep.	1945-6.			1946-7.			1947-8.		
	No. Sold.	Value per hd.	% of Total Sales Value.	No. Sold.	Value per hd.	% of Total Sales Value.	No. Sold.	Value per hd.	% of Total Sales Value.
Ewes	528	60.0	18.8	702	63.1	20.9	548	84.0	22.5
Rams	18	87.11	0.9	27	97.9	1.3	22	96.9	1.0
Lambs - Fat	1798	63.6	73.2	2090	74.9	73.8	1520	92.1	68.4
" -Store	127	67.0	5.1	48	61.3	1.4	113	75.0	4.2
Lambs For Breeding	23	98.7	1.4	56	72.10	0.7	53	81.9	2.1
Lambs in Couples	27	35.7	0.6	51	27.11	1.9	109	33.8	1.8
Total	2521	66.8	100.0	2974	71.2	100.0	2365	86.6	100.0
No. of Flocks:	27			34			31		

This investigation into costs of lowland sheep flocks was carried out on farms where the principal cash commodity produced is milk. Sheep form a secondary, but often a very useful complementary enterprise on them. In some respects the flock constituted merely a part of a plan for pasture management and utilisation, although with adequate safeguards it can, and does, provide a substantial supplementary income to these dairy farms. With the recent changes in the agricultural price structure it may be quite reasonable to ask whether, in some circumstances, the total output from resources available on the farm might not increase with a greater emphasis on the sheep enterprise.

In the table that follows an attempt is made to show the value of the Gross Output from sheep on the farms in the investigation, in terms of labour, feed and capital investment costs.

Value of Gross Output (See Note below)*

	Total Sample.			Identical Sample.		
	1945-6	1946-7	1947-8	1945-6	1946-7	1947-8
	27	34	31	20	20	20
	Flocks.	Flocks.	Flocks.	Flocks.	Flocks.	Flocks.
	£.	£.	£.	£.	£.	£.
Per £100 Labour Cost	646	589	574	692	604	610
Per £100 Food and Grazing Cost	315	270	352	341	254	336
Per £100 Capital Invested: in Sheep**	86	79	77	91	76	73

A typical farmer in Wales, faced with the problem of finding adequate and suitable labour, might well consider maintaining a small efficient dairy herd together with a reasonably-sized sheep flock, rather than a larger dairy herd of poorer quality and less efficiently managed. Under some conditions sheep prove better partners with dairy cows in the organisation of pasture utilisation than do beef cattle.

The Director of the Dominion Experimental Farm Service in Canada recently reviewed the place of sheep in the Canadian agricultural economy. While that great Dominion offers more scope for large flock organisation and therefore, possibly, greater efficiency in the use of some of the resources

* Gross Output = Sales (Sheep + Wool) + Closing Valuation less Opening Valuation and purchases of sheep.

** Capital invested in Sheep = Opening Valuation of Breeding Stock + Purchases of Breeding Stock and Lambs.

needed, some of his remarks are worthy of our consideration here in this country. He said that "from a national point of view the importance of an industry should be assessed not only by its size, but by the products it manufactures, and the use it makes of the natural resources of the country. The particular industry is of even greater value if it utilises these resources without entering into competition with other similar industries."

"Sheep in many ways fulfil these requirements. Because of their economical way of utilising all kinds of grasses from the most inaccessible, and sometimes poorest and unused land, the minimum requirement of winter-stored roughages and grains, and minimum labour requirements per unit of lamb and wool, sheep have definite advantages over other classes of meat animals. Furthermore the function of sheep as soil improvers is not always appreciated."

"The sheep industry.....with its research.....agencies has the means of solving most of its problems, the most important being perhaps a reorganisation in the field on a sounder economic basis so as to produce efficiently and economically meat and wool of choice quality."*

* The place for Sheep in Canada. Archibald. Agriculture Institute Review. Ottawa, March 1948.

APPENDIX A.Table 1.

Comparative Changes in Sheep Population. England & Wales
& Wales. 1938-9 = 100. (each quarter).

	(a) England and Wales.			(b) Wales.		
	Total	Total		Total	Total	
	Sheep	Sheep		Sheep	Sheep	
Ewes for:	over 1	under 1	Ewes for:	over 1	under 1	
Breeding.	year old.	year old.	Breeding.	year old.	year old.	
<u>1938-9.</u>						
June	100	100	100	100	100	100
September*	100	100	100	100	100	100
December	100	100	100	100	100	100
<u>1940-44.</u>						
June	79	81	79	85	89	85
September	90	83	90	101	92	104
December	73	75	89	86	85	96
<u>1945.</u>						
June	69	73	67	83	90	82
September	84	75	86	104	94	115
December	70	72	86	89	88	103
<u>1946.</u>						
June	70	74	68	84	91	83
September	84	76	85	105	95	118
December	68	70	77	88	88	98
<u>1947.</u>						
June	58	63	49	60	69	50
September	71	66	64	81	73	75
December	59	60	58	70	70	62
<u>1948.</u>						
June	61	62	59	69	71	71
September	74	64	76	88	75	103
December	60	61	71	73	71	89

* Note: The base period for September quarterly figures is September 1940.

Table 2.

Changes in Relative populations of Sheep & Cattle
in Wales.

Period.	Total Sheep per 100 of -	
	Total Cattle.	Store Cattle over 2 years old.
1870-79	460	2,357
1880-89	390	2,119
1890-99	440	2,809
1900-09	460	3,824
1910-19	460	4,046
1920-29	470	4,342
1930-39	520	5,274
1870-1939	460	3,350
1945-46	429	3,331
1945-48	380	2,994

Table 3(a).

Structure of Sheep Population in Wales.
(Based on December figures).

	1944.	1945.	1946.	1947.	1948.
	%	%	%	%	%
Ewes for Breeding	50.9	50.7	51.0	55.4	54.1
Shearling Ewes	14.4	14.5	14.6	14.9	10.8
Rams kept for Service	1.6	1.6	1.6	1.8	1.6
Other Sheep over 1 yr. old	5.1	5.3	5.6	5.1	4.2
Total Sheep over 1 yr. old	72.0	72.1	72.8	77.2	70.7
Ram Lambs	0.4	0.4	0.4	0.4	0.5
Other Male Lambs	9.3	9.7	8.9	9.1	10.8
" Female "	18.3	17.8	17.9	13.3	18.0
Total under 1 yr. old	28.0	27.9	27.2	22.8	29.3
Total All Sheep	100.0	100.0	100.0	100.0	100.0

Table 3(b).

Distribution of the Sheep Population - by Counties.
Percentage distribution of Total Sheep.
(December figures).

	1944.	1945.	1946.	1947.	1948.
1. Counties having <u>over</u> 60% of Ewes in 'Subsidy' Flocks at December 1946:-	%	%	%	%	%
Brecon	13.5	13.6	13.7	12.9	13.3
Cacmarvon	8.4	8.4	8.5	9.5	9.3
Cardigan	8.1	7.7	7.7	7.2	7.1
Glamorgan	7.5	7.5	7.2	7.8	7.6
Merioneth	13.2	12.6	13.2	12.3	12.4
Montgomery	13.8	14.2	14.1	13.8	13.8
Radnor	9.2	9.3	9.3	9.3	9.5
2. Counties having less than 60% of Ewes in 'Subsidy' Flocks at December 1946:					
Anglesey	1.6	1.7	1.7	2.2	2.2
Carmarthen	5.5	5.4	5.2	5.4	5.2
Denbigh	9.8	9.7	10.1	10.0	10.2
Flint	1.4	1.5	1.3	1.6	1.5
Monmouth	5.7	6.1	5.8	5.8	5.8
Pembroke	2.3	2.3	2.2	2.2	2.1
Total Wales and Monmouth	100.0	100.0	100.0	100.0	100.0

APPENDIX B - HILL SHEEP INVESTIGATION.Table 1.Costs and Returns per 100 Ewes for Breeding.

	1946-7.	1947-8.
Number of Farms	39	49
Average Size of Ewe Flock per Farm	643	447
<u>Expenses.</u>	£. s. d	£. s. d
Purchases of Sheep	15. 9. 8	21. 16. 3
Foods: Hay, Sheep Nuts etc	7. 12. 9	1. 4. 7
Grazing	19. 5. 11	27. 14. 0
Rape, Turnips etc.	2. 5. 2	2. 13. 0
Agistment Costs	15. 13. 10	25. 3. 1
Labour on Sheep	32. 4. 5	42. 1. 1
Transport	0. 18. 8	1. 17. 6
Other Expenses	6. 6. 7	17. 1. 8
Total Expenses	99. 17. 0	139. 11. 2
<u>Income.</u>		
Sales of Sheep	45. 1. 1	161. 9. 0
Value of Wool	9. 16. 4	40. 12. 11
Hill Sheep Subsidy	42. 17. 10	110. 15. 4
Total Income	97. 15. 3	312. 17. 3
Excess Income over Expenses	-	173. 6. 1
" Expenses over Income	2. 1. 9	-
Opening Valuation of Sheep	301. 7. 11	328. 4. 10
Closing " " "	180. 13. 6	382. 3. 1
Valuation Differ. Decrease	120. 14. 5	-
" " Increase	-	53. 18. 3
Net Result: Profit	-	227. 4. 4
Loss	122. 16. 2	-

Table 2.

Comparative Results for 39 Identical Flocks.

	1945-6.	1946-7.	1947-8.
Average Size of Ewe Flock at Opening Date	629	643	399
<u>Expenses.</u>	£ s. d.	£ s. d.	£ s. d.
Purchases of Sheep	482. 6. 6	3,880. 11. 6	2,289. 11. 0
Food:			
Hay, Sheep Nuts, etc.	244. 17. 4	1,914. 16. 9	247. 16. 5
Grazing	4,723. 5. 11	4,836. 8. 0	4,728. 19. 4
Rape, Turnips, etc.	777. 11. 1	566. 4. 5	561. 12. 1
Agistment	4,390. 16. 9	3,932. 16. 6	2,927. 8. 2
Labour on Sheep	7,191. 2. 8	8,076. 10. 2	7,330. 4. 0
Transport	373. 9. 11	233. 9. 6	241. 18. 6
Other Expenses	655. 19. 4	1,586. 8. 10	2,651. 1. 1
Total Expenses	18,839. 9. 6	25,027. 5. 8	20,978. 10. 7
<u>Income.</u>			
Sales of Sheep	19,244. 13. 3	11,292. 16. 4	21,238. 4. 1
Value of Wool	5,310. 6. 8	2,460. 5. 6	6,146. 10. 7
Hill Sheep Subsidy	9,043. 0. 0	10,750. 4. 0	18,534. 12. 6
Total Income	33,597. 19. 11	24,503. 5. 10	45,919. 7. 2
Excess Income over Expen.	14,758. 10. 5	-	24,940. 16. 7
" Expenses over Income:	-	523. 19. 10	-
Opening Valn. of Sheep	72,369. 8. 0	75,545. 6. 0	45,286. 10. 0
Closing " " "	75,545. 6. 0	45,286. 10. 0	54,710. 6. 10
Valuation Increase	3,175. 18. 0	-	9,423. 16. 10
" Decrease	-	30,258. 16. 0	-
Net Result: Profit	17,934. 8. 5	-	34,364. 13. 5
Loss	-	30,782. 15. 10	-

Table 3(a).

Costs and Returns per 100 Ewes in Size Groups.
Year 1946-7.

	Size Groups.			
	1.	2.	3.	4.
	400 Ewes or less.	401 - 550 Ewes.	551 - 850 Ewes.	Over 850 Ewes.
Number of Flocks	14	11	4	10
<u>Expenses.</u>	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Purchases of Sheep	8. 4. 3	17. 8. 11	21. 10. 7	15. 11. 1
<u>Foods:</u>				
Hay, Sheep Nuts, etc.	10. 19. 5	8. 9. 0	6. 16. 2	6. 9. 4
Grazing	28. 8. 4	23. 14. 0	20. 4. 4	14. 9. 7
Rape, Turnips, etc.	2. 1. 2	7. 6. 1	-	0. 13. 4
Agistment	17. 0. 3	16. 17. 3	19. 19. 11	13. 17. 6
Labour on Sheep	46. 9. 3	39. 1. 4	27. 19. 8	25. 18. 7
Transport	1. 0. 10	1. 0. 8	1. 2. 11	0. 16. 2
Other Expenses	6. 5. 9	9. 1. 4	4. 3. 1	5. 12. 11
Total Expenses	120. 9. 3	122. 18. 7	101. 16. 8	83. 8. 6
<u>Income.</u>				
Sales of Sheep	50. 11. 6	51. 16. 4	33. 12. 2	42. 19. 4
Value of Wool	11. 14. 4	12. 17. 11	8. 15. 3	8. 3. 3
Hill Sheep Subsidy	42. 17. 1	41. 16. 5	42. 7. 11	43. 9. 2
Total Income	105. 2. 11	106. 10. 8	84. 15. 4	94. 11. 9
Excess Income over Exp.	-	-	-	11. 3. 3
" Expenses over Income	15. 6. 4	16. 7. 11	17. 1. 4	-
Opening Valn. of Sheep	342. 13. 8	313. 3. 7	266. 9. 4	291. 8. 0
Closing " " "	191. 4. 7	228. 4. 3	153. 11. 3	162. 16. 10
Valuation Increase	-	-	-	-
Valuation Decrease	151. 9. 1	84. 19. 4	112. 18. 1	128. 11. 2
Net Result: Profit	-	-	-	-
Loss	166. 15. 5	101. 7. 3	129. 19. 5	117. 7. 11
Average Number of Ewes per Flock	279	498	690	1293

Table 3(b).

Costs and Returns per 100 Ewes in Size Groups.
Year 1947-48.

	Size Groups:-			
	Up to 400 Ewes.	401 - 550 Ewes.	551 - 850 Ewes.	Over 850 Ewes.
Number of Flocks	26	9	8	6
<u>Expenses.</u>	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Purchases of Sheep	14. 5. 2	23. 7. 4	19. 16. 9	29. 6. 6
Foods:				
Hay, Sheep Nuts, etc.	1. 5. 11	0. 6. 3	2. 8. 3	0. 16. 3
Grazing	35. 9. 6	23. 17. 4	25. 13. 7	24. 11. 0
Rape, Turnips etc.	3. 3. 6	4. 11. 3	1. 11. 7	1. 16. 5
Agistment	15. 19. 7	34. 3. 9	15. 15. 9	35. 6. 4
Labour on Sheep	54. 17. 6	37. 5. 0	37. 7. 3	36. 19. 7
Transport	1. 3. 6	2. 0. 4	2. 0. 7	2. 6. 2
Other Expenses	17. 15. 2	18. 2. 4	13. 15. 3	18. 8. 9
Total Expenses	143. 19. 10	143. 13. 7	118. 9. 0	149. 11. 0
<u>Income.</u>				
Sales of Sheep	156. 14. 1	175. 18. 11	128. 7. 2	182. 16. 4
Value of Wool	40. 4. 5	43. 16. 4	38. 16. 10	40. 9. 9
Hill Sheep Subsidy	126. 1. 3	103. 15. 7	130. 11. 0	85. 10. 6
Total Income	322. 19. 9	323. 10. 10	297. 15. 0	308. 16. 7
Excess Income over Expenses	178. 19. 11	179. 17. 3	179. 6. 0	159. 5. 7
Excess Expenses over Income	-	-	-	-
Opening Valuation of Sheep	288. 14. 9	350. 4. 1	307. 11. 1	367. 1. 8
Closing " " "	339. 15. 7	419. 1. 5	352. 4. 9	421. 11. 6
Valuation Increase	51. 0. 10	68. 17. 4	44. 13. 8	54. 9. 10
Valuation Decrease	-	-	-	-
Net Result: Profit	230. 0. 9	248. 14. 7	223. 19. 8	213. 15. 5
Loss	-	-	-	-
Average Number of Ewes per Flock	232	456	648	1096

APPENDIX C - LOWLAND (GRASS FED) SHEEP INVESTIGATION.

Table 1.

Costs and Returns per 100 Ewes for Lambing.

	1946-7.	1947-8.
<u>Expenses.</u>	£. s. d	£. s. d
Purchases of Sheep	166. 4. 10	255. 5. 8
Foods:		
Hand-fed	28. 5. 1	8. 14. 9
Grazing	113. 12. 9	111. 0. 11
Folded Crops	19. 19. 8	19. 8. 7
Labour on Sheep	74. 5. 0	85. 5. 8
Vet. and Medicines	3. 5. 4	3. 10. 10
Transport	6. 13. 6	3. 4. 7
Other Sundry Expenses	2. 10. 0	3. 7. 10
<u>Total Expenses</u>	<u>414. 16. 2</u>	<u>489. 18. 10</u>
<u>Income.</u>		
Sales of Sheep	597. 13. 8	635. 0. 3
Value of Wool	37. 17. 7	33. 10. 4
<u>Total Income</u>	<u>635. 11. 3</u>	<u>668. 10. 7</u>
<u>Excess Income over Expenses</u>	<u>220. 15. 1</u>	<u>178. 11. 9</u>
Opening Valuation of Sheep	422. 10. 3	414. 14. 4
Closing " " "	390. 18. 10	491. 4. 4
Valuation Increase	-	76. 10. 0
Valuation Decrease	31. 11. 5	-
Net Result: Profit	189. 3. 8	255. 1. 9
Loss	-	-

Table 2.

Costs and Returns for an Identical Group of 20
Farms. Totals for All Flocks.

	1945-46.	1946-47.	1947-48.
Total Number of Ewes for Lambing.	1,397	1,295	1,272
<u>Expenses.</u>	£ s. d.	£ s. d.	£ s. d.
Purchases of Sheep	2,376.11. 6	2,623. 2. 8	3,933.14. 6
<u>Foods:-</u>			
Hand-fed	160.12. 8	365. 6. 1	116. 1.10
Grazing	1,395. 3. 9	1,620.11. 3	1,437.15. 2
Folded Crops	236.14. 1	177.18. 2	265. 5. 0
Labour on Sheep	883. 4. 0	910. 6. 4	1,002.16. 4
Vet. and Medicines	68. 0. 6	91.18. 6	55. 7. 9
Other Sundry Expenses (Including Transport)	21. 8. 3	101. 7. 0	87.15.11
Total Expenses	5,141.14. 9	5,890.10. 0	6,898.16. 6
<u>Income.</u>			
Sales of Sheep	7,295.18. 6	7,934.19. 6	8,474.11. 0
Value of Wool	461. 5.11	446. 8. 5	402. 8. 4
Total Income	7,757. 4. 5	8,381. 7.11	8,876.19. 4
Excess Income over Expenses	2,615. 9. 8	2,490.17.11	1,978. 2.10
Opening Valuation of Sheep	4,475.17. 6	5,211.18. 7	4,949.12. 0
Closing Valuation of Sheep	5,211.18. 7	4,949.12. 0	6,127. 8. 0
Valuation Increase	736. 1. 1	-	1,177.16. 0
Valuation Decrease	-	262. 6. 7	-
Net Result: Profit	3,351.10. 9	2,228.11. 4	3,155.18.10
Loss	-	-	-

Table 3.

Average Costs & Returns per Lamb Produced.

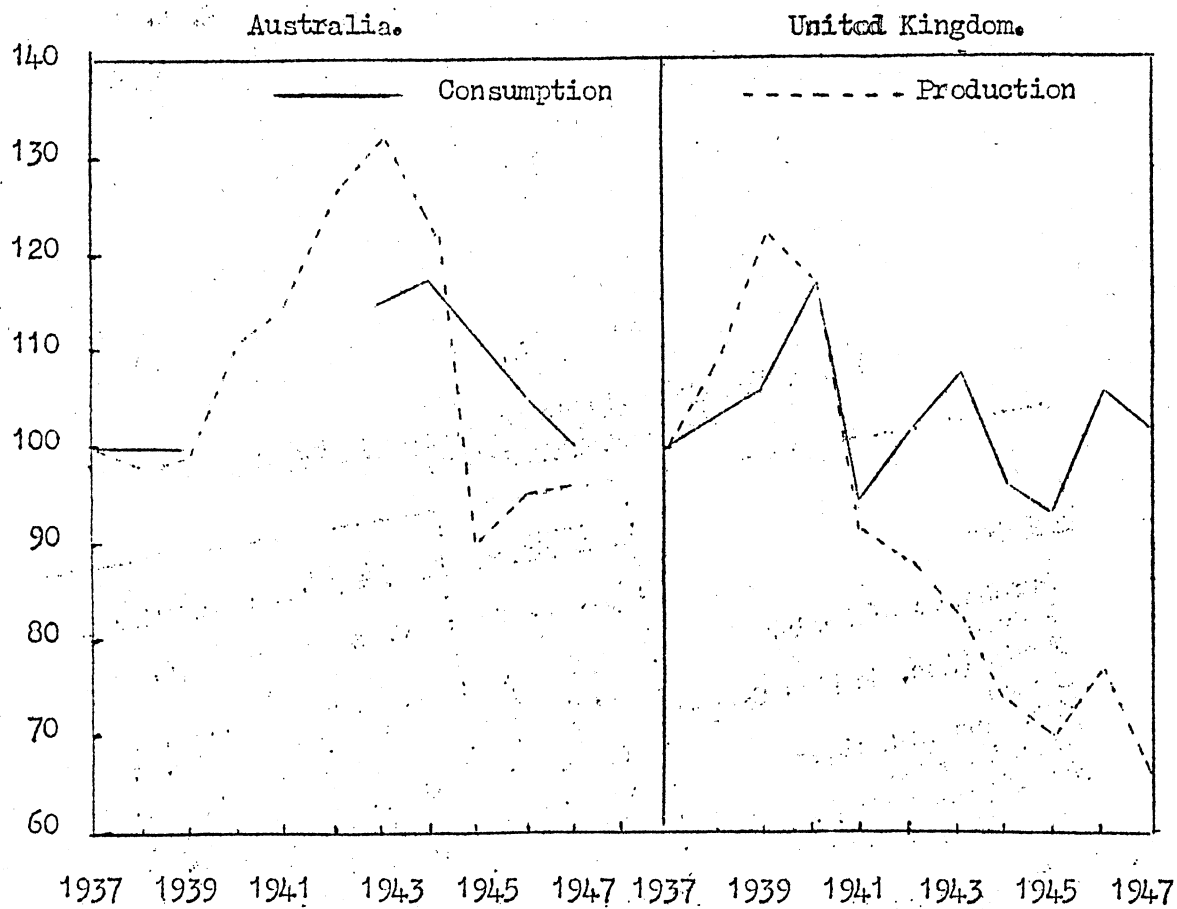
	1945-6.	1946-7.	1947-8.
Number of Flocks	27	34	31
<u>Costs:</u>	£ s. d.	£ s. d.	£ s. d.
Purchases of Lambs	0. 10. 1	0. 12. 8	1. 0. 3
Grazing	0. 15. 2	0. 15. 2	0. 16. 3
Foods (inc. Folded Crops)	0. 4. 2	0. 6. 3	0. 4. 1
Labour	0. 9. 5	0. 10. 5	0. 12. 6
Vet. and Medicines	0. 0. 10	0. 0. 9	0. 0. 6
Miscellaneous	0. 0. 3	0. 0. 10	0. 1. 0
Net Depreciation of Breeding Flocks	0. 2. 0	0. 7. 7	-
Total Gross Costs	2. 1. 11	2. 13. 8	2. 14. 7
<u>Deduct:</u>			
Value of Wool	0. 4. 10	0. 5. 0	0. 4. 11
Net Appreciation of Breeding Flock	-	-	0. 0. 4
Total Credits	0. 4. 10	0. 5. 0	0. 5. 3
Total Net Cost	1. 17. 1	2. 8. 8	2. 9. 4
Average output deadweight per lamb	42½ lb.	41 lb.	40½ lb.
Output Value per Lamb	£3. 8. 2	£3. 13. 8	£4. 6. 7
Total No. of lambs produced	2,221	2,650	2,193

Table 4.

Average Costs and Returns per Lamb Produced.
20 Identical Farms.

	1945-6.	1946-7.	1947-8.
<u>Costs:-</u>	£. s. d.	£. s. d.	£. s. d.
Purchases of Lambs	0. 10. 3	0. 14. 10	1. 2. 0
Grazing	0. 14. 5	0. 16. 5	0. 16. 1
Food (inc. Folded Crops)	0. 4. 1	0. 5. 5	0. 4. 3
Labour	0. 9. 2	0. 9. 3	0. 11. 3
Vet. and Medicines	0. 0. 8	0. 0. 11	0. 0. 8
Miscellaneous	0. 0. 3	0. 0. 10	0. 1. 0
Net Depreciation on Breeding Flocks	-	0. 6. 9	-
Total Gross Costs	1. 18. 10	2. 14. 5	2. 15. 3
<u>Deduct:-</u>			
Value of Wool	0. 4. 9	0. 4. 6	0. 4. 6
Net Appreciation of Breeding Flocks	0. 1. 1	-	0. 1. 4
Total Credits	0. 5. 10	0. 4. 6	0. 5. 10
Total Net Cost	1. 13. 0	2. 9. 11	2. 9. 5
Average Output deadweight per Lamb	42 lb.	40½ lb.	39½ lb.
Output Value per Lamb	£3. 7. 9	£3. 12. 6	£4. 4. 9
No. of lambs purchased per 100 finally produced	20	16	28
Total No. of lambs produced:	1,932	1,978	1,784

Relative Changes in Consumption and Production
of Mutton and Lamb. 1937 = 100.



Note: No consumption data available for Australia for 1940-1942 inclusive.

